

OBG | There's a way

June 29, 2016

Mr. Todd Gmitro

Project Manager, Remediation and Reuse Branch
Corrective Action Section 1
United States Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Mail Code: LU-9J
Chicago, IL 60604-3507

RE: Corrective Measures Study Interim Update – South Perimeter Soil Vapor
GE Aviation – Evendale Facility
FILE: 612/62576

Dear **Mr. Gmitro:**

O'Brien & Gere (OBG), on behalf of GE Aviation (GE), is pleased to provide this update to the ongoing soil vapor assessment activities at the GE Aviation – Evendale, Ohio Facility. Beginning in late 2006, GE has evaluated soil vapor concentrations at locations along the southern site boundary. Beginning in 2011, an updated network of shallow and deep soil vapor sampling points were installed and were sampled annually from 2011 through 2013. In 2013, additional shallow soil vapor sampling points were installed and sampling increased to a quarterly frequency. Deep soil vapor probes have not been sampled since 2013. As outlined within the May 2015 *GE Aviation Corrective Measures Study Interim Report – Soil Vapor* (OBG, 2015), decreasing or stable trends were observed at 11 different sampling locations along the southern site boundary for trichloroethene (TCE) and tetrachloroethene (PCE), prompting OBG's recommendation that the sampling frequency of the soil vapor probes decrease from quarterly to semi-annually.

COMMENTS FROM EPA

In USEPA comments on the 2015 interim report, dated June 19, 2015, it was suggested that semi-annual monitoring of shallow and deep soil gas sampling locations, at which “an historic exceedance of a chlorinated VOC soil gas screening level” has been shown, continue in order to support the conclusion that soil gas VOC concentrations continue to trend downward or remain below applicable screening levels.

SUMMARY OF 2015 SOIL VAPOR SAMPLING ACTIVITIES

Following the receipt of comments from USEPA, semi-annual sampling was conducted during two events in 2015; one sampling event took place between July and August of 2015 with the second event taking place in December 2015. Results of both sampling events are generally consistent with previous sampling efforts in that soil gas concentrations of TCE and PCE continue to trend downward and/or remain low along the southern boundary of the site. Overall results of the sampling program, which include data from the July and December 2015 events, are presented in Table 1 and shown on Figure 1.



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RECOMMENDATIONS

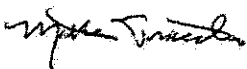
Based on USEPA's comments, current and historical soil vapor results have been compared to updated industrial screening levels that differ from those presented within the 2015 interim report. The industrial soil vapor screening level of TCE decreased from 1,000 $\mu\text{g}/\text{m}^3$ to 280 $\mu\text{g}/\text{m}^3$, while the industrial soil vapor screening level of PCE decreased from 15,667 $\mu\text{g}/\text{m}^3$ to 5,600 $\mu\text{g}/\text{m}^3$. These numbers are derived from USEPA-approved residential indoor air screening values, assuming an attenuation factor (α) of 0.03. The residential screening values were then adjusted by a factor of 4.2 to account for the occupancy hours of industrial workers.

Results from the 2015 soil vapor sampling events are generally consistent with those concentrations observed between 2011 and 2014. The concentrations observed within those monitoring points that were sampled in 2015 were below the established industrial soil vapor screening levels, with the exception of monitoring point SV-12S, which could not be sampled during the most recent December 2015 event due to water within the sample tubing, and PMW-3S-VP, which displayed concentrations (510 $\mu\text{g}/\text{m}^3$ and 330 $\mu\text{g}/\text{m}^3$ in July and December 2015, respectively) within historical ranges and approximately an order of magnitude below the initial concentration of 2,400 $\mu\text{g}/\text{m}^3$ observed in October 2011.

OBG's review of the data suggests that the soil vapor monitoring along the southern Facility boundary can be concluded or greatly reduced and focused, as it has been demonstrated that current levels of PCE and TCE in soil vapor are continuing to trend downward and have consistently been below industrial screening levels.

A meeting with USEPA will be proposed for later this summer to discuss this, and other, recommendations for the site. We look forward to the opportunity for further discussion with USEPA.

Very truly yours,
O'BRIEN & GERE ENGINEERS, INC.



Matthew Traister, P.E.
Vice President

Attachments: Table 1 – Shallow and Deep Soil Vapor Data - South Perimeter ($\mu\text{g}/\text{m}^3$)
Figure 1 – Shallow Soil Vapor Sampling Results December 2006 to December 2015, PCE and TCE

cc: Edward Kolodziej – GE Corporate
Joanne Reinhold – GE-Aviation Evendale
Rick Boone – OBG



**Shallow and Deep Soil
Vapor Data – South
Perimeter ($\mu\text{g}/\text{m}^3$)**

Shallow and Deep Soil Vapor Data - South Perimeter ($\mu\text{g}/\text{m}^3$)

Sampling Location	Pipes Placement	Sampling Date	Field Measurements	Field Results	Remarks
Residential Soil Vapor Screening Levels (ug/L)			103	11.5	
Industrial Soil Vapor Screening Levels (ug/L)			4,400	483	Revised monitoring plan.
AF-75-VP	Shallow	October-11	--	--	Cease sampling based on historical non-detects and recent inundation of sampling point by water.
		April-12	--	--	
		March-13	--	--	
		August-13	--	--	
		October-13	--	--	
		April-14	--	--	
		June-14	--	--	
		September-14	--	--	
		January-15	--	--	
AF-12S-VP	Shallow	July-15	NS	NS	Cease sampling based on historical low-level readings and non-detects and recent inundation of sampling point by water.
		December-15	NS	NS	
		October-11	430	--	
		January-12	--	--	
		March-13	--	--	
		August-13	--	--	
		October-13	--	--	
		April-14	6.5	--	
		January-15	--	--	
SV-99S	Shallow	July-15	NS	NS	Cease sampling based on historical non-detects and recent inundation of sampling point by water.
		December-15	NS	NS	
		March-13	--	--	
		August-13	--	--	
		November-13	--	--	
		April-14	--	--	
		September-14	--	--	
		January-15	--	--	
		July-15	--	--	
SV-10S	Shallow	December-15	NS	NS	Cease sampling based on historical low-level readings and non-detects.
		March-13	42	--	
		August-13	--	--	
		October-13	--	--	
		April-14	--	--	
		June-14	--	--	
		September-14	31	--	
		January-15	41	--	
		July-15	--	--	
SV-11S	Shallow	December-15	--	--	Cease sampling based on historical low-level readings and non-detects.
		April-14	--	23	
		June-14	--	--	
		September-14	--	--	
		July-15	--	--	
SV-12S	Shallow	December-15	NS	NS	Recommended ceased sampling based on generally low readings.
		April-14	--	260	
		June-14	4	6	
		September-14	--	--	
		July-15	--	350	
SV-13S	Shallow	December-15	NS	NS	Cease sampling based on historical low-level readings and non-detects.
		April-14	--	7	
		June-14	--	--	
		September-14	--	--	
		January-15	--	--	
SV-14S	Shallow	December-15	--	--	Cease sampling based on historical non-detects.
		April-14	--	--	
		June-14	--	--	
		September-14	--	--	
		July-15	--	--	
OSMW-10S-VP	Shallow	December-15	--	--	Cease sampling based on recent non-detect and low-level readings.
		October-11	96	380	
		January-12	29	45	
		March-13	8	13	
		June-13	53	85	
		October-13	32	50	
		April-14	6	10	
		June-14	19	81	
		September-14	--	1.5	
PMW-3S-VP	Shallow	January-15	--	--	Recommended ceased sampling based on generally low readings.
		July-15	--	--	
		December-15	16	82	
		October-13	--	2400	
		January-12	--	94	
		March-13	--	190	
		June-13	--	810	
		October-13	5	1200	
		April-14	--	130	
TMW-2S-VP	Shallow	June-14	5	729	Cease sampling based on recent non-detect and low-level readings.
		September-14	--	490	
		January-15	--	100	
		July-15	--	510	
		December-15	--	330	
		October-11	120	31	
		January-12	NS	NS	
		March-13	--	5.7	
		June-13	--	--	

Notes:
Bold values represent concentrations above residential soil vapor screening levels.
Bold and Highlighted values represent concentrations above industrial soil vapor screening levels.

**Shallow Soil Vapor
Sampling Results
December 2006
to December 2015,
PCE and TCE**

DRAFT DOCUMENT

E:\Ge-Cap.61\262576-2016-Acta-Ca-Encl-Reports\Updated South Perimeter Vapor Monitoring - CMI Interim Rpt - 2016\Figure102 - Figure 1 - Shallow Soil Vapor Results Jan 2007 to Dec 2015.mxd

PLOT DATE: 05/03/16

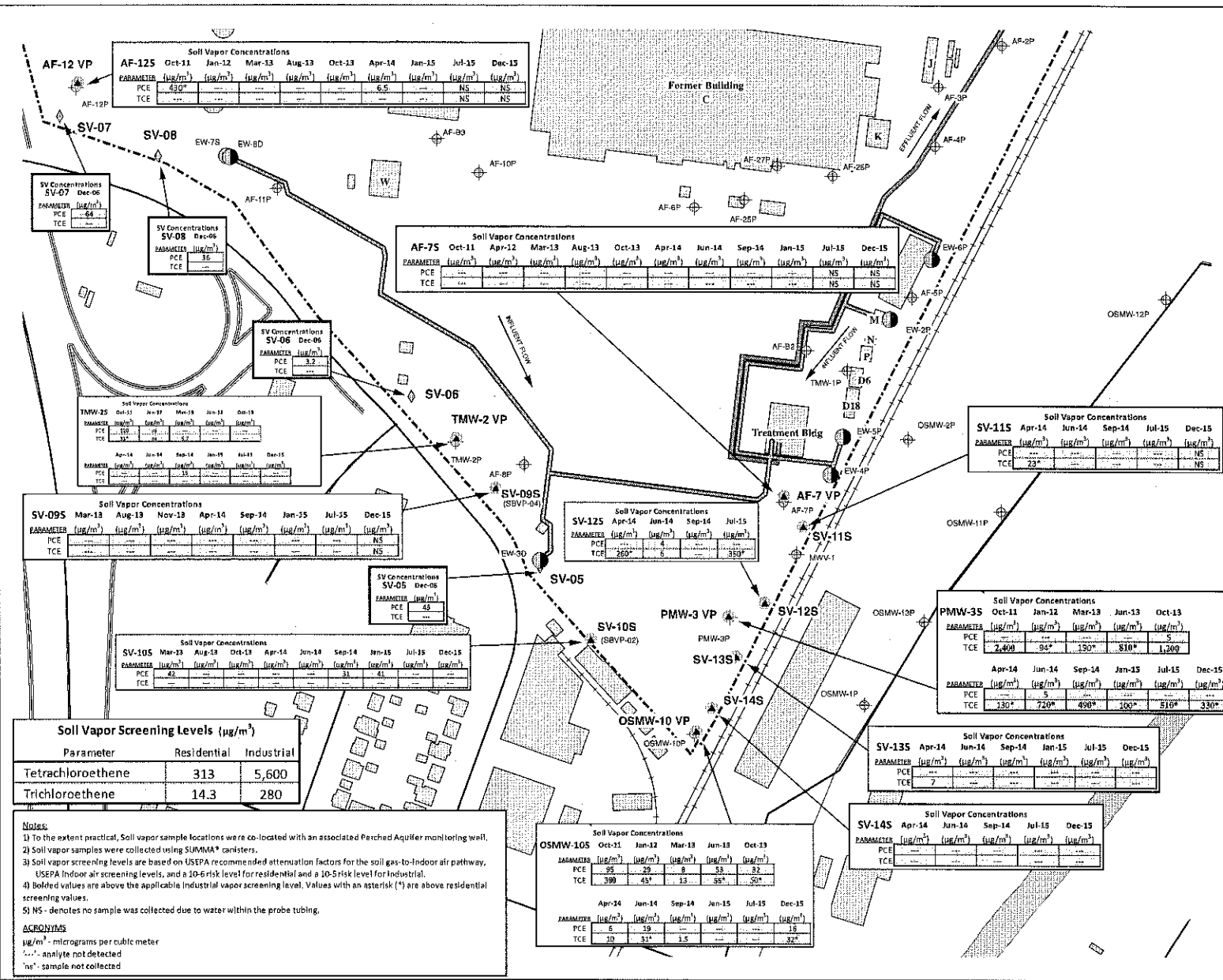


FIGURE 1

LEGEND

- ◆ 2006 SOIL VAPOR LOCATION
- 2011-2014 SOIL VAPOR LOCATION
- ⊕ PERCHED ZONE MONITORING WELL
- ⊙ IRM EXTRACTION WELLS
- IRM INFLUENT PIPING
- IRM EFFLUENT PIPING

GE
EVENDALE, OHIO

SHALLOW SOIL VAPOR
SAMPLING RESULTS
DECEMBER 2006 TO
DECEMBER 2015

PCE and TCE

0 100 200 400
Feet

61262577/105
JUNE 2016

O'BRIEN & GERE ENGINEERS, INC.



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